

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A wavelength converting laser device, comprising:
a broad-area laser diode producing laser light ~~and, the laser diode~~ including a slab optical waveguide structure controlling vertical transverse mode of the laser light;
an optical resonator having ~~a pair of facing~~ first and second reflectors,
~~including one of the first and second reflectors comprising~~ a reflecting surface having a shape reducing loss in the optical resonator, with regard to a specific horizontal transverse mode of the laser light, as compared to the loss in the optical resonator for other horizontal transverse modes; and
a wavelength converter for converting the laser light into harmonic light, ~~the wavelength converter including a slab optical waveguide structure controlling vertical transverse mode of the laser light and controlling vertical transverse mode of the harmonic light.~~
2. (Currently Amended) The wavelength converting laser device of Claim 1, wherein the reflecting surface is substantially ~~parallel to~~ the same shape as a wavefront of the laser light.
3. (Currently Amended) The wavelength converting laser device of Claim 1, wherein one of the ~~pair of the facing~~ first and second reflectors includes a distributed-reflectance-Bragg-grating-reflector integral with the laser diode.
4. (Currently Amended) The wavelength converting laser device of Claim 1, wherein one of the ~~pair of the facing reflectors~~ first and second reflectors includes a

coating on a facet of the wavelength converter having a curved surface shape that is convex toward a direction outside of the optical resonator.

5. (Currently Amended) The wavelength converting laser device of Claim 1, wherein one of the ~~pair of the~~ facing first and second reflectors includes a distributed-reflectance-Bragg-grating-reflector integral with the wavelength converter.

Claims 6 and 7 (Cancelled).

8. (Original) The wavelength converting laser device of Claim 1, wherein the wavelength converter is a quasi-phase matching-wavelength converter having a periodically domain-inversed structure.

9. (Currently Amended) The wavelength converting laser device of Claim 8, wherein the periodically domain-inversed structure has a shape substantially ~~parallel to the same as~~ a wavefront of the laser light.

10. (Previously Presented) The wavelength converting laser device of Claim 1, wherein the wavelength converter includes a MgO:LiNbO_3 crystal having a z-axis substantially aligned with a polarization direction of the laser.

11. (Original) The wavelength converting laser device of Claim 1, wherein the wavelength converter is disposed within the optical resonator.

12. (Original) The wavelength converting laser device of Claim 1, wherein the optical resonator, the laser diode, and the wavelength converter are integrated.

13. (Currently Amended) The wavelength converting laser device of Claim 1, further comprising a third reflector, for reflecting the harmonic light, disposed between the laser diode and the wavelength converter.

14. (Previously Presented) The wavelength converting laser device of Claim 1, further comprising transverse mode converting means for reducing mode mismatching between a vertical transverse mode of the laser light in the laser diode and a vertical transverse mode of the laser light in the wavelength converter.

15. (Previously Presented) The wavelength converting laser device of Claim 1, further comprising temperature control means for controlling temperature of the laser diode and temperature of the wavelength converter.

16. (Previously Presented) The wavelength converting laser device of Claim 1, wherein a ratio of a wavelength-shift to temperature change at a lasing wavelength of the laser light of the laser diode is substantially the same as a ratio of a wavelength-shift to temperature change at a phase matching wavelength of the laser light of the wavelength converter.

17. (Currently Amended) A display device, comprising:
a broad-area laser diode producing laser light ~~and, the laser diode~~ including a slab optical waveguide structure controlling vertical transverse mode of the laser light;
an optical resonator having ~~a pair of~~ facing first and second reflectors, ~~including one of the first and second reflectors~~ comprising a reflecting surface having a shape reducing loss in the optical resonator, with regard to a specific horizontal transverse mode of the laser light, as compared to the loss in the optical resonator for other horizontal transverse modes; and
a wavelength converter for converting the laser light into harmonic light, ~~the~~ wavelength converter including a slab optical waveguide structure controlling vertical

transverse mode of the laser light and controlling vertical transverse mode of the harmonic light, wherein the laser diode and the wavelength converting laser device are a light source for generating an image.

18. (Previously Presented) The display device of Claim 17, wherein the light source for generating an image is a source of green light.

19. (Previously Presented) The display device of Claim 17, wherein the light source for generating an image is a source of blue light.

20. (Previously Presented) The display device of Claim 17, further comprising a liquid crystal material as optical modulating means for generating an image.

21. (Previously Presented) The display device of Claim 17, further comprising digital reflecting means as optical modulating means for generating an image.